DU BOIS *v.* KIRK.

APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE WESTERN DISTRICT OF PENNSYLVANIA.

No. 240. Argued April 1, 2, 1895. — Decided April 22, 1895.

Arthur Kirk was the original inventor of the invention patented to him by letters patent No. 268,411, issued December 5, 1882, for a new and useful improvement in movable dams; and that invention was the application of an old device to meet a novel exigency and to subserve a new purpose, and was a useful improvement and patentable, and was not anticipated by other patents or inventions, and was infringed by the dams constructed by the plaintiff in error.

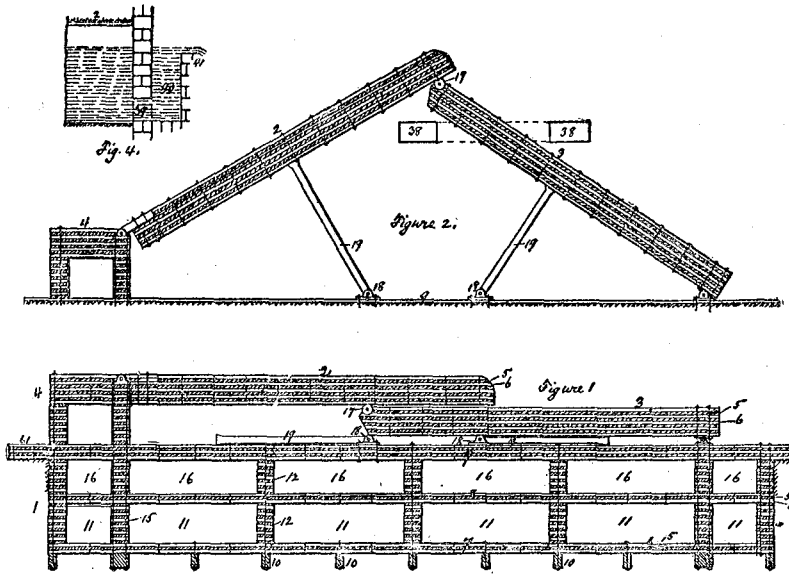
The fact that the defendant is able to accomplish the same result as the plaintiff by another and different method does not affect the plaintiff's right to his injunction.

An appeal does not lie from a decree for costs; and if an appeal on the merits be affirmed, it will not be reversed on the question of costs.

THIS was a bill in equity for the infringement of letters patent No. 268,411, issued December 5, 1882, to Arthur Kirk for a new and useful improvement in movable dams.

As stated in his specification, the invention "relates to improvements in the construction of movable dams and locks, whereby they are stronger, safer, more durable, and more easily operated than those heretofore in use." The specification sets forth an improvement in the style of dam known as the bear-trap dam, in several different particulars, the fifth one of which consisted of "an open sluice, waterway, or tail race, so arranged relatively to the dam that the water which is not required to support the leaves will escape, and so relieve the dam of all unnecessary pressure."

The following drawings exhibit the device:



In relation to this portion of the patent the patentee states: "In the end wall of the dam I make an open sluice, waterway, or tail race, 38, Fig. 2, at such height as will permit all water which is not required to sustain the gates to escape from under them. When the gates are down, as in the position shown in Fig. 1, the water is admitted by the wickets under them. This raises and floats them up until they reach the position shown by Fig. 2. By that time the water, having reached the sluice 38, which passes through the wall around the end of the gate, will flow freely through, sustaining the gates at that level.

"A modified construction of the sluice 38 is shown by Fig. 4, where the outlet 39 in the wall is below the level of the water, the latter passing through the outlet 39 into a forebay or well, 40, and thence over the bridge 41. If desired, the discharge opening may be controlled by a valve operated by a float.

"It is apparent that the form, place, and details of construction of the sluice for relieving the gates from excessive pres-

sure below can be varied by the skilled constructor; but in all cases an open channel will be necessary when the water has reached a certain height or pressure under the gates."

The sixth claim, the only one alleged to be infringed, is as follows:

"6. A bear-trap dam, having a relieving or open sluice extending from under the gates, so as to relieve them from unnecessary pressure, substantially as and for the purposes described."

Three grounds of defence were set up and insisted upon by the defendant. First, that the alleged invention was not useful; second, that the device was in use by the defendant before the date of the alleged invention by the patentee; and third, that the defendant had not infringed.

Upon a hearing upon pleadings and proofs, the Circuit Court found in favor of the plaintiff upon all these issues, (33 Fed. Rep. 252,) and subsequently entered a final decree in his favor for an injunction, with nominal damages. 46 Fed. Rep. 486. The defendant thereupon appealed to this court.

Mr. G. A. Jenks for appellant. *Mr. W. P. Jenks* and *Mr. T. H. Baird Patterson* were with him on the brief.

Mr. Thomas W. Bakewell and *Mr. William Bakewell* for appellee. *Mr. James K. Bakewell* was with them on the brief.

Mr. Justice Brown, after stating the case, delivered the opinion of the court.

Bear-trap dams are used in small streams for the purpose of creating a reservoir of water, in which logs may be collected, and over which they may be floated down the river when the dam is opened. These dams are movable, and consist of two leaves of heavy timbers, bolted together, rising and falling between two vertical sidewalls of masonry or

timber work. These leaves are hinged at their outer edges to timbers in the bed of the stream, and when the dam is down, the upper leaf overlaps the other to a certain extent. Parallel with the stream, at one or both sides of the dam, is a sluice, termed a forebay, at each end of which is a gate or wicket, for the admission of water at its upper end from the pond, and its discharge at its lower end into the tail race. When it is desired to raise the dam, and create a reservoir of water, the wicket at the upper end of the forebay is opened and that at the lower end is closed. The effect of this is to admit the water into the forebay, from which it flows through openings provided for the purpose under the leaves of the dam, and, by hydrostatic pressure, raises them gradually up to their full height, when they assume somewhat the shape of the letter A. When it is desired to lower the dam, and create what is known as a chute for the passage of logs, the wicket at the upper end of the forebay is closed and that at the lower end is opened, the effect of which is to exhaust the water from the forebay and from beneath the dam. As the water runs out the leaves of the dam fall to a horizontal position, and the water from the reservoir pours out through the chute thus formed. If, however, the volume of water be so great as to raise the water in the forebay above the height of the dam, the pressure underneath the leaves may become so great as to tear the lower leaf from under the upper one, and thus wreck the dam, and, perhaps, create a serious flood below it. It is said that an average difference of three feet between the level of the water in the forebay and the level in the chamber under the dam would exert upon leaves — each of which is 450 square feet in area — an upward pressure of 97,200 pounds. To resist this hydrostatic pressure the common practice was to limit the upward motion of the lower leaf by stops, cleats, or chains, or have a man constantly on watch to relieve the pressure by opening or closing the wickets in the forebay, as required.

The object of the invention in question was to do this automatically, by opening an overflow underneath the apex of the leaves of the dam, so that, when they reached their

full height, any further pressure upon them would be relieved by the surplus of water running out through this overflow or waste weir into the tail race. An alternative device is shown in figure 4, by which, instead of permitting the water to run off through a waste way, located near the apex of the dam, it is allowed to run over the lower end wall of the forebay, which for that purpose is made a few inches lower than the apex of the dam. Under the laws of hydrostatic action, lowering the water in the forebay also lowers it in the chamber beneath the dam to precisely the same level, this chamber being connected with the forebay at the bottom.

Waste ways were a common and well-known method of relieving the pressure of water, but had, before the Kirk invention, been generally if not universally used to draw off the water from the pond above the dam, when it reached a certain height, and thereby the pressure upon the dam was relieved. Indeed, the dam itself becomes a waste way, as soon as the water in the pond reaches a higher level than the apex of the dam, and flows over it. It would appear that, at the time of the Kirk invention, there was no recognized method of relieving the pressure of the water underneath the leaves of a bear-trap dam, and that the dam was prevented from being carried away only by cleats or chains to brace the structure, and enable it to resist the pressure from beneath.

The invention seems to have occurred to Kirk upon the occasion of a visit of a delegation of the Pittsburgh Chamber of Commerce, on Christmas day of 1879, to a bear-trap dam erected by John DuBois, an uncle of the defendant, who had recently patented an overlapping third leaf, designed to hold down the other leaves. This improvement, as stated by one of the witnesses, "consisted in adding a third leaf, which was hinged to the down-stream end of the up-stream leaf in such a way that when the dam was raised, the down-stream leaf was supported and held in place by a third leaf." Kirk was not satisfied with this method of resisting, instead of relieving, the pressure, and as he states: "It occurred to me next day to provide an overflow at the height desired to maintain the gates, above which all water should flow away, because I

observed that the rising power of the dam was the water under it." And revolving the matter further in his mind, the thought occurred to him of making an overflow at the desired height from a point under the gates, and discharging the water into the tail race, and also of making the lower end of the forebay lower than the upper end. He explained this invention to his family on his return from the dam, and in the early part of 1880 explained it to DuBois himself, and urged him to adopt it upon some dams which he was then building. It seems that DuBois disapproved of it, and stated that it was not necessary, as his third leaf answered every purpose; but, on April 19, 1881, surreptitiously made application himself for a similar method of relieving the pressure of the water beneath the dam. Upon learning of this, Kirk filed a caveat, and applied for the patent in suit. An interference was declared by the Patent Office, and Kirk was subsequently adjudged to be the first inventor, and the patent was issued to him, with a claim for a bear-trap dam, having a relieving or open sluice extending from under the gates. In the meantime, however, upon an application filed November 11, 1881, a patent was issued to DuBois, January 3, 1882, for a similar device, wherein the claim was restricted to "an overflow or discharge to limit the head of the water located at a point in advance of the gate, whereby the surplus water is permitted to escape before reaching the gate."

The Kirk invention is undoubtedly a very simple one, and it may seem strange that a similar method of relieving the pressure had never occurred to the builders of bear-trap dams before; but the fact is that it did not, and that it was not one of those obvious improvements upon what had gone before, which would suggest itself to an ordinary workman, or fall within the definition of mere mechanical skill. It was in fact the application of an old device to meet a novel exigency, and to subserve a new purpose. That it is a useful improvement can scarcely be doubted. Indeed, in view of the fact that John DuBois made application for a similar patent himself, and that he and the defendant, since his death, have constantly made use of a device which differs from that

of Kirk's only in the fact that he relieves the pressure by lowering the end of the forebay to a level beneath the apex of the dam, it does not lie in defendant's mouth to deny its utility. The presumptions, at least, are against him. *Lehnbeuter* v. *Holthaus*, 105 U. S. 94; *Western Electric Co.* v. *LaRue*, 139 U. S. 601, 608; *Gandy* v. *Main Belting Co.*, 143 U. S. 587, 595.

There are claimed as anticipations of this patent —

1. Patent No. 251,771 to John DuBois. This is the patent already referred to, application for which was made November 11, 1881, nearly six months after application was made for the patent in this suit. It is, therefore, a subsequent patent, and of course cannot be claimed as an anticipation.

2. Patent No. 229,682 to John DuBois, issued July 6, 1880, upon an application filed February 10, 1879, the fifth claim of which patent is as follows: "The combination of a jointed or flexible dam or lock gate adapted to rise and fall beneath the water, a chamber or passage beneath the gate to admit water for elevating the same, a secondary gate connected with said chamber and controlling the escape of water there from below the gate, and a float located above the dam and arranged to operate the second gate." In relation to this the patentee states that for the purpose of securing the elevation and depression of the dam, a flume is arranged to conduct water beneath it from the higher elevation of the stream above, and a second flume arranged to conduct the water from beneath the gate into the stream below. A small gate or valve located in the second flume serves to control the escape of the water from beneath the dam, and thereby controls the height of the dam, in the same manner that the height of the lock gate is controlled. In order to control this small gate or valve and the height of the dam automatically, the patentee makes use of a float, mounted in the stream above the dam, and connected with the gate. The rise and fall of the water causes the float to rise and fall accordingly, and the float, in turn, opens and closes the gate, so as to render the escape of the water from under the dam sections proportionate to the height of water in the stream. The pur-

pose of this opening is to control the height of the leaves of the dam, and not the water under the dam. If the dam is intended to be set at half the elevation of the full height of the leaves, this device properly adjusted would only allow enough upward pressure under the leaves to raise them to that height. To do this he places a float, not in the forebay, but in the stream above the dam, and connects it with the gate by a rack and pinion. Its operation seems to be to vary automatically the *height of the dam* in accordance with the variations of the height of the water in the pond above. He lowers the dam and thus draws off the water from the pond above when needed. Kirk does not vary the height of his dam at all, but merely relieves it of pressure, the dam, when raised, being always at the same elevation.

The device, the operation of which is not very clearly shown in the patent, seems to have a different object from that of the Kirk patent, and employs quite a different means. In relation to this device, which appears to have been introduced on an accounting before the master, the master found "as to the use of floats as a means of regulating the wickets and controlling the pressure of water under the leaves, the evidence as to their practical use and operation was so indefinite that the master will submit the subject without further comment." This patent does not seem to have been suggested to the court below as an anticipation, and it is not noticed by it in its opinion. Nor does defendant's expert make any reference to it. There is nothing in his testimony to indicate that the device which this patent describes accomplishes the same result or works in the same way as Kirk's invention; and the fact that DuBois himself subsequently made application for the patent, which, upon Kirk's interference, was awarded to the latter, indicates quite clearly that DuBois did not consider it as accomplishing the purpose sought by his subsequent application. We do not find it to have been an anticipation of the Kirk patent.

Defendant made use, in his alleged infringing device, of a forebay, the lower wall of which was eight inches lower than the apex of the dam, when the dam was raised. The water in

the forebay as well as that under the leaves of the dam is thus kept at a lower level than that in the pool above the dam. This, in its practical effect, is an exact equivalent of the aperture shown in the Kirk patent, and inasmuch as this device is stated in that patent as an alternative and equivalent device, accomplishing the same result as the aperture first described, it required no invention on the part of DuBois to make the change. He had only to adopt the suggestion made by Kirk in his specification, and use a forebay with a short lower wall instead of the aperture. It is true the Patent Office attempted to divide the invention by limiting Kirk to a relieving or open sluice extending from under the gates, and allowing to DuBois a claim for an overflow or discharge, to limit the height of the water, located at a point in advance of the gate. But if the inventions were practically one and the same, the Patent Office was in error in so dividing the invention, and as it adjudged that Kirk was the prior inventor, he was the one entitled to the patent. The defendant practically admits that his device accomplished the same result as the other, but argues that it makes no practical difference whether the water be discharged from the forebay by a wicket located near the bottom, or by lowering the lower wall of the forebay and discharging the water over such wall; and that, by the use of the lower wicket, the water in the forebay may be held at any level which may be desired. This argument derives some support from the fact that the Circuit Court, in its final decree, found that the defendant realized no profits or saving whatever from the use of the patented device, and, therefore, awarded only nominal damages. But if this argument be sound, defendant will not suffer by the injunction, as the method of relieving the water in the forebay by the manipulation of the upper and lower wickets, known as cocking the wickets, is undoubtedly open to him. Plaintiff, however, is none the less entitled to his injunction by the fact that defendant is able to accomplish the same result by another and different method.

Plaintiff was awarded full costs in the court below, notwithstanding that, in the report of the master and in the final

decree, he was awarded only nominal damages. It is insisted that this was an error, and we are cited to the cases of *Dobson* v. *Hartford Carpet Co.*, 114 U. S. 439, and *Dobson* v. *Dornan*, 118 U. S. 10, in support of the contention that defendant should have been allowed costs after the interlocutory decree. In these cases, however, the court below awarded substantial damages, and this court, while sustaining the interlocutory decree, reversed the final decree so far as the awarding of damages, and remanded the cases with instructions to allow the defendant a recovery of his costs after interlocutory decree, and to the plaintiff his costs to, and including the interlocutory decree. In this case we sustain the action of the court below both as to the interlocutory and final decree, and, as costs in equity and admiralty cases are within the sound discretion of the court, we do not feel inclined to disturb this decree in awarding full costs to the plaintiff. *Canter* v. *American Insurance Co.*, 3 Pet. 307; *The Malek Adhel*, 2 How. 210, 237; *The Sapphire*, 18 Wall. 51; *Kittredge* v. *Race*, 92 U. S. 116, 120. This court has held in several cases that an appeal does not lie from a decree for costs; and if an appeal be taken from a decree upon the merits, and such decree be affirmed with respect to the merits, it will not be reversed upon the question of costs. *Elastic Fabrics Co.* v. *Smith*, 100 U. S. 110, 112; *Paper Bag Machine Cases*, 105 U. S. 766, 772; *Wood* v. *Weimar*, 104 U. S. 786, 792; *Russell* v. *Farley*, 105 U. S. 433, 437.

The decree of the court below is, therefore,

Affirmed.

Mr. Justice Field dissented.

Mr. Justice Shiras took no part in the decision of this case.